TURBINE CYCLE PERFORMANCE TESTING

SCOPE OF WORK:
The Intermountain Power Service Corporation (IPSC) is uprating plant capacity by replacing the high pressure (HP) turbine section.

TEST PROCEDURES:

ASME PTC 6.1 Alternative Test Procedure for Steam Turbines

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Performance testing on one cooling tower will be staged in three phases. An initial baseline performance test completed on one cooling tower will be performed this summer 2001. An interim performance test will be conducted on the same cooling tower while focusing in on performance on 1 quadrant which will have been upgraded. Separate cold circulating water measurement will be required for that quadrant using hanging or floating catch basins with temperature measurement. This test will have to be conducted this winter and will be the basis for modifying the remaining 15 quadrants. The third CT test will be after the cooling tower is completely upgraded, sometime in late spring or early summer 2002 to determine if full expected performance is acheived.

All cooling tower testing shall be conducted in accordance with the CTI ATC-105 (00) test code requirements.

The inlet wet bulb measurements shall be taken at 4 locations (stringers) per quadrant and at 3 different heights (requiring 12 per quadrant and 48 psychrometers per cooling tower). This is to reduce the effects of high wind conditions at this facility.

Circulating water flow will be measured by pitot tube traverse using two twenty point traverses, 90 degrees apart in a 84" circulating water line (scaffolding will be provided). Hot water test taps are available in the circ water supply line or measurements can be taken at the inlet riser (a three point average is requested). Cold water test grid is available at the cold water outlet stop log location (a nine point matrix is requested). Fan power measurements will be taken by IPSC Electricians using test group CTI calibrated test equipment. Ambient wet bulb and wind speed shall be taken

upwind using the average of three psychrometers.

SCHEDULE SUMMARY: IGS Unit 2

Performance Testing	April 8- 13, 2002
HP Turbine Enthalpy Drop- 30 day followup testing (only for station instrumentation indicates a significant drop)	May 7- 9, 2002

TEST SERIES:

Full Load Tests (2) @ VWO/ 2400 psig/ Load 975 MWg
96% Load Tests (1) @ VWO/ 2300 psig/ Load 930 MWg
92% Load Tests (1) @ VWO/ 2200 psig/ Load 890 MWg
87% Load Tests (1) @ VWO/ 2100 psig/ Load 850 MWg
83% Load Tests (1) @ VWO/ 2000 psig/ Load 810 MWg
95% Load Test (1) throttle controlled/ ~2300 psig/ Load 925 MWg

TURBINE CYCLE PERFORMANCE TESTING- TURBINE DESIGN INFORMATION

Intermountain Power Service Corporation
850 West Brushwellman Road
Delta, Utah 84624

INTERMOUNTAIN GENERATING STATION
Two sister 875 MW gross units
IGS Unit 1 went commercial 6/86, IGS Unit 2 went commercial 5/87

TURBINE ORIGINAL DESIGN INFO
General Electric S-2, tandem-compound, single reheat with six-flow low pressure stages. Turbine consists of
HP Turbine- newly replaced (03/2002) Allstom single flow, full arc admission
IP Turbine- double flow reheat
LP Turbines- 3 double flow low pressure sections

Stop Valves (4)
Control Valves (4) new (03/2002) full arc admission, via valve chest
combine reheat stop and intercept valves (2)

Feedwater Heaters
Dual string of 3 high pressure feedwater heaters (8A/8B, 7A/7B, & 6A/6B)

TURBINE CYCLE PERFORMANCE TESTING- BIDDERS LIST

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